

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

Bombardier Aerospace

For an exemption from § 25.815 of
Title 14, Code of Federal Aviation Regulations

Regulatory Docket No. FAA-2002-12349

DENIAL OF EXEMPTION

By letter dated April 25, 2002, Rod Iverson, Director, Bombardier Aerospace Completion Center Airworthiness, Tucson Completion Center, P.O. Box 11186, Tucson, Arizona 85734-1186, petitioned for an exemption from § 25.815 Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would permit a narrower passenger aisle width than required by § 25.815 on a Bombardier Model BD-700-1A10 airplane, serial number 9091.

The petitioner requests relief from the following regulations:

Section 25.815, Amendment 25-38, requires a minimum passenger aisle width of 12 inches below 25 inches from the floor and 20 inches above 25 inches from the floor for airplanes with passenger seating capacities of 11 to 19.

The petitioner's supportive information is as follows:

“The BD-700-1A10 aircraft is designed to the requirements of FAR [Federal Aviation Regulations] part 25, for Transport Category Aircraft. These rules are addressed basically to Transport Category airplanes that are used for carriage of fare paying passengers from the general public, and also must consider aircraft with passenger seating from less than 10 up to many hundreds. The BD-700-1A10 on the other hand, is Type Certified for a maximum of 19 passengers and will be outfitted exclusively for corporate use. The differences between the commercial Transport Category aircraft used in airline operation and aircraft specifically used for corporate operations (whether private or for non-scheduled commercial) are not segregated in the FAR Part 25 rules. Bombardier

Aerospace contends that airplanes specifically designed for corporate service, whether private or commercial, should be eligible for exemptions of cabin features and facilities which do not comply with the full requirements of FAR part 25, provided a similar level of safety is provided and can be demonstrated. The corporate fleet utilizing aircraft certified in the Transport Category world wide has now grown to a point where it is contended that the certification agencies need to consider revised design rules for aircraft involved in this class of operation.

“Description of Exemption Request:

“The seating configuration of aircraft S/N 9091 currently requires the inboard aft-facing seat of assembly #7RH, B/E AMP model number 2524.527.011017A, be placarded to prevent occupancy during taxi, take-off and landing. Please refer to attached seat layout drawing [available in the Docket] for the location of seat #7RH. The placard is required because aisle width, after an emergency landing and resulting seat backrest deformation resulting from a 16G acceleration, does not fully meet the requirements of FAR 25.815.

“Structural dynamic certification testing performed by B/E Aerospace (AMP) on seat model number 2524.527.01() for the BD-700-1A10 aircraft is documented in the Dynamic Test Report: Global Express Single and Double Cabin Seating, Document Number 52252, dated December 21, 1998. Installation Limitations report, number 2524.500.01-IL02, dated January 29, 1999, provides the installation design guidelines for the seats. The data generated from the tests indicate that worst case permanent backrest deformation after application of loads per FAR 25.562 on B/E AMP aft facing double seat model number 2524.527.01() seat is 10.7 inches. Given the deformation results of seat model number 2524.527.01() located at the #7RH position on aircraft 9091, Bombardier Completion Center revised the passenger seat layout and obtained a worst case minimum emergency egress aisle width of 12.12 inches.

“For this exemption Bombardier Aerospace would like to consider BD-700-1A10 aircraft S/N 9091 cabin in terms of two passenger zones. Aircraft 9091 is configured for 19 passengers, 6 in the aft passenger zone and 13 in the forward passenger zone. The distribution of the passenger seating is such that in the event of an emergency egress situation, the aft 6 passengers are required to pass seat #7RH with an aisle width of 12.12 inches. This aft 6-passenger zone does not contain life rafts or other emergency equipment that would require movement during an emergency situation. Provided the requirements of FAR 25.815 and the consideration that BD-700-1A10 aircraft S/N 9091 to have an aft passenger zone occupancy of 6 passengers, Bombardier Completion Center believes that an equivalent level of safety is achieved with an aisle width of 12.12 inches.

“Effect of the Exemption:

“Bombardier Aerospace contends that passenger safety is not affected by the requested deviation to FAR 25.815, Width of Aisle. FAR 25.815 states that for aircraft with 10 or less passengers the minimum aisle width, less than 25 inches from the floor, is 12 inches.

A footnote to the FAR 25.815 table for aircraft with 10 or less passengers states that, ‘A narrower width not less than 9 inches may be approved when substantiated by tests when found necessary by the Administrator.’ In support of this request for deviation from FAR 25.815, Bombardier Completion Center can provide substantiation in the form of analysis to verify the egress capability of the aft 6 passengers as they pass seat #7RH deformed by a 16G event on BD-700-1A10 aircraft serial number 9091.

“Issue of Public Interest:”

“The aircraft manufactured by Bombardier are equipped with avionics and other specialized systems and equipment manufactured in North America. The business provides competition to manufacturers in Europe and elsewhere, and maintains a considerable employment in North America. With the growing numbers of Transport Category corporate aircraft predicted and the stabilizing effect their manufacture and support has on the job market, it is definitely in the public interest of both countries.

“Bombardier Aerospace believes that the above arguments favor an exemption to permit the #7RH seat on BD-700-1A10 aircraft number 9091 to be occupied during taxi, take-off and landing, and that an aisle width of 12.12 inches will not degrade egress of the aft 6 passengers during emergency evacuation situations. Bombardier Completion Center respectfully requests that you review the above proposal and consider a positive response to our exemption request. This exemption is for a single BD-700-1A10, S/N 9091, which will not be used in scheduled service, and not for carrying the fare paying general public. This aircraft is being completed for corporate part 91 use by Federal Express. Therefore, to expedite approval for our customer we respectfully request from the FAA that the Federal Register comment period be waived.”

A summary of the petition was published in the Federal Register on June 12, 2002 (67 FR 40374). No comments were received.

The FAA’s analysis/summary is as follows:

As noted by the petitioner, there are differences between commercial and private use operation (whether by an individual or a corporation) of transport category airplanes that warrant consideration of the appropriate level of safety. The FAA is giving great attention to the issues raised when these airplanes are operated in private use. In recognizing the differences between commercial and private use operations, the FAA has identified several regulatory requirements that may need to be revised to address the safety issues revealed by these differences. The FAA is currently reviewing the adequacy of the current regulations and in the future may propose revisions to the requirements, where appropriate.

In regards to the aisle width requirements, the FAA considers the minimum aisle widths in § 25.815 appropriate for achieving rapid egress from an airplane in an emergency for both commercial and private use operation. Additionally, § 25.815 acknowledges that

smaller numbers of passengers can be evacuated more quickly by providing different requirements for aisle width on the basis of passenger seating capacity. For example, the aisle width requirements for an airplane with a passenger seating capacity of 11 to 19, such as the Bombardier Model BD-700-1A10 airplane (serial number 9091), are less stringent than for an airplane with a passenger seating capacity of 20 or more. Airplanes with passenger seating configurations of 20 or more are required to have a 15-inch aisle at heights below 25 inches from the floor, where airplanes with passenger seating configurations of 11 to 19 are only required to have a 12-inch aisle at heights below 25 inches from the floor.

For Model BD-700-1A10 airplanes with a passenger seating capacity of 19, § 25.815 requires a minimum aisle width of 20 inches at heights 25 inches or more above the floor. Advisory Circular 25.562-1A allows a seat to deform not more than 2 inches into this longitudinal aisle space at heights 25 inches or more above the floor based on data from § 25.562 dynamic tests. The petitioner indicated that the backrest of a seat on Model BD-700-1A10 airplane, serial number 9091, deformed 10.7 inches during dynamic testing per § 25.562. This deformation results in an aisle width of 12.12 inches above 25 inches from the floor on this airplane. This 33 percent reduction in aisle width is considered significant and would reduce the egress capability of 6 passengers on the airplane. Note that a 12.12-inch aisle is not acceptable per § 25.815 even for airplanes with passenger seating capacities of 10 or less. A 15-inch aisle with a maximum of 2 inches of seat deformation into the longitudinal aisle space is required at heights 25 inches or more above the floor for these airplanes.

Although a grant of exemption clearly benefits the petitioner as a private entity, the FAA considers meeting the aisle requirements of § 25.815 to be in the traveling public's interest.

In consideration of the foregoing, I find that a grant of exemption is not in the public interest, and will significantly affect the overall level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, the petition of Bombardier Aerospace for an exemption from the aisle width requirements of 14 CFR § 25.815 is denied.

Issued in Renton Washington, on September 27, 2002.

/s/ Ali Bahrami
Ali Bahrami
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service